

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
 - TEXT CUT OFF AT TOP, BOTTOM OR SIDES
 - FADED TEXT
 - ILLEGIBLE TEXT
 - SKEWED/SLANTED IMAGES
 - COLORED PHOTOS
 - BLACK OR VERY BLACK AND WHITE DARK PHOTOS
 - GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**

THIS PAGE BLANK (USPTO)



RESEARCH

PRODUCTS

INSIDE DELPHI

[All Docs](#) | [Advanced Search](#) | [Search History](#)
[My Account](#) | [Products](#)

Search: Quick/Number Boolean Advanced

The Delphion Integrated View

Get Now: PDF | [More choices...](#)Tools: Add to Work File: Create new WorView: [INPADOC](#) | Jump to: [Top](#)Go to: [Derwent...](#) [Email](#)

Title: JP3222257A2: MANUFACTURE OF LITHIUM ELECTRODE FOR LITHIUM BATTERY

Country: JP. Japan.

Kind: A

Inventor: NAGAURA TORU;
YOKOGAWA MASAAKI;
NAKAO TOSHIHIKO;
SATO KATSUZO;



Assignee: SONY CORP.
[News](#), [Profiles](#), [Stocks](#) and More about this company

Published / Filed: 1991-10-01 / 1990-01-25

Application Number: JP1990000015768

IPC Code: H01M 4/04; H01M 4/64;

Priority Number: 1990-01-25 JP1990000015768

Abstract:

PURPOSE: To prevent the adhesion of lithium in a rolled state and the breakage of a lithium foil during operation up to battery assembly for efficient operation by press-attaching the lithium foil formed by extrusion directly to a metal collector foil before winding in a rolled state.

CONSTITUTION: A copper foil rolled substance 22 that a copper foil 21 is wound in a rolled state and an extrude 24 for a lithium foil 23 are prepared to have the one face of the copper foil 21, supplied from the copper foil rolled substance 22, and the desired-thickness lithium foil 23, extruded and molded from the extruder 24, faced in opposition, passed through a pair of pressure rollers 25, press-attached to each other and then wound in a rolled state. In this case, for making the lithium foil 23 thin up to a desired thickness, the lithium foil 23 from the extruder 24 is given cold rolling via 4-step rolls 26-29 and cold rolling mechanism 30. It is thus possible to prevent the adhesion of lithium in a rolled state and the breakage of the lithium during operation up to battery assembly for efficient operation.

COPYRIGHT: (C)1991,JPO&Japio.

BEST AVAILABLE COPY

INPADOC Legal Status: None [Get Now: Family Legal Status Report](#)
Family: [Show 2 known family members](#)
Other Abstract Info: DERABS C91-330151 DERC91-330151



Nominate

[this for the Gallery...](#)

© 1997-2003 Thomson Delphion [Research Subscriptions](#) | [Privacy Policy](#) | [Terms & Conditions](#) | [Site Map](#) | [Contact](#)

THOMSON
DELPHION

RESEARCH PRODUCTS INSIDE DELPHI

My Account | Products Search: Quick/Number Boolean Advanced

The Delphion Integrated View

Get Now: PDF | More choices....

Tools: Add to Work File: Create new Wor

View: INPADOC .. | Jump to: Top

Go to: Derwent...

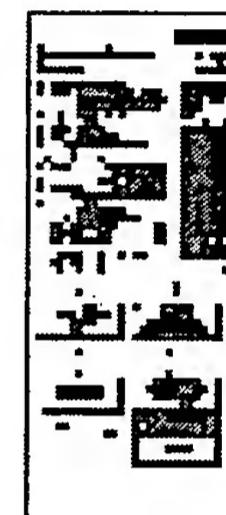
Ema

>Title: **JP3222257A2: MANUFACTURE OF LITHIUM ELECTRODE FOR LITHIUM BATTERY**

Country: JP Japan

Kind: A

Inventor: NAGAURA TORU;
YOKOGAWA MASAAKI;
NAKAO TOSHIHIKO;
SATO KATSUZO;



Assignee: SONY CORP
[News, Profiles, Stocks and More about this company](#)

Published / Filed: 1991-10-01 / 1990-01-25

Application Number: JP1990000015768

IPC Code: H01M 4/04; H01M 4/64;

Priority Number: 1990-01-25 JP1990000015768

Abstract:

PURPOSE: To prevent the adhesion of lithium in a rolled state and the breakage of a lithium foil during operation up to battery assembly for efficient operation by press-attaching the lithium foil formed by extrusion directly to a metal collector foil before winding in a rolled state.

CONSTITUTION: A copper foil rolled substance 22 that a copper foil 21 is wound in a rolled state and an extrude 24 for a lithium foil 23 are prepared to have the one face of the copper foil 21, supplied from the copper foil rolled substance 22, and the desired-thickness lithium foil 23, extruded and molded from the extruder 24, faced in opposition, passed through a pair of pressure rollers 25, press-attached to each other and then wound in a rolled state. In this case, for making the lithium foil 23 thin up to a desired thickness, the lithium foil 23 from the extruder 24 is given cold rolling via 4-step rolls 26-29 and cold rolling mechanism 30. It is thus possible to prevent the adhesion of lithium in a rolled state and the breakage of the lithium during operation up to battery assembly for efficient operation.

COPYRIGHT: (C)1991,JPO&Japio

BEST AVAILABLE COPY

INPADOC Legal Status: None Get Now: [Family Legal Status Report](#)

Family: [Show 2 known family members](#)

Other Abstract Info: DERABS C91-330151 DERC91-330151



[Nominate](#)

[this for the Gallery...](#)

© 1997-2003 Thomson Delphion . . . [Research Subscriptions](#) | [Privacy Policy](#) | [Terms & Conditions](#) | [Site Map](#) | [Contact](#)



(19)

(11) Publication number:

03

Generated Document.

PATENT ABSTRACTS OF JAPAN(21) Application number: **02015768**(51) Intl. Cl.: **H01M 4/04 H01M 4/64**(22) Application date: **25.01.90**

(30) Priority:

(43) Date of application
publication: **01.10.91**(84) Designated contracting
states:(71) Applicant: **SONY CORP**(72) Inventor: **NAGAURA TORU
YOKOGAWA MASAAKI
NAKAO TOSHIHIKO
SATO KATSUZO**

(74) Representative:

**(54) MANUFACTURE OF
LITHIUM ELECTRODE FOR
LITHIUM BATTERY**

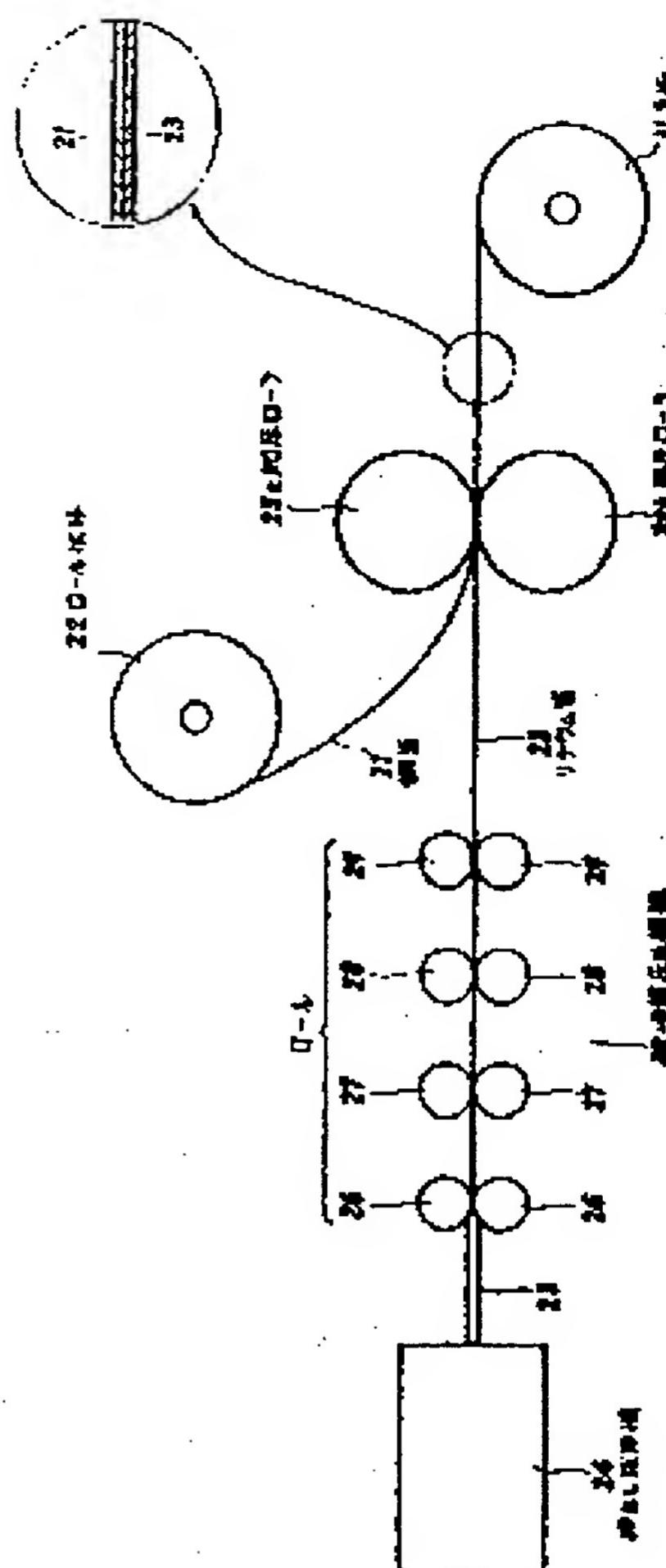
(57) Abstract:

PURPOSE: To prevent the adhesion of lithium in a rolled state and the breakage of a lithium foil during operation up to battery assembly for efficient operation by press-attaching the lithium foil formed by extrusion directly to a metal collector foil before winding in a rolled state.

CONSTITUTION: A copper foil rolled substance 22 that a copper foil 21 is wound in a rolled state and an extrude 24 for a lithium foil 23 are prepared to have the one face of the copper foil 21, supplied from the copper foil rolled substance 22, and the desired-thickness lithium foil 23, extruded and molded from the extruder 24, faced in opposition, passed through a pair of pressure rollers 25, press-attached to each other and then wound in a rolled

state. In this case, for making the lithium foil 23 thin up to a desired thickness, the lithium foil 23 from the extruder 24 is given cold rolling via 4-step rolls 26-29 and cold rolling mechanism 30. It is thus possible to prevent the adhesion of lithium in a rolled state and the breakage of the lithium during operation up to battery assembly for efficient operation.

COPYRIGHT: (C)1991,JPO&Japio





(19)

(11) Publication number:

03

Generated Document.

PATENT ABSTRACTS OF JAPAN(21) Application number: **02015768**(51) Int'l. Cl.: **H01M 4/04 H01M 4/64**(22) Application date: **25.01.90**

(30) Priority:

(43) Date of application
publication: **01.10.91**(84) Designated contracting
states:(71) Applicant: **SONY CORP**(72) Inventor: **NAGAURA TORU
YOKOGAWA MASAAKI
NAKAO TOSHIHIKO
SATO KATSUZO**

(74) Representative:

**(54) MANUFACTURE OF
LITHIUM ELECTRODE FOR
LITHIUM BATTERY**

(57) Abstract:

PURPOSE: To prevent the adhesion of lithium in a rolled state and the breakage of a lithium foil during operation up to battery assembly for efficient operation by press-attaching the lithium foil formed by extrusion directly to a metal collector foil before winding in a rolled state.

CONSTITUTION: A copper foil rolled substance 22 that a copper foil 21 is wound in a rolled state and an extrude 24 for a lithium foil 23 are prepared to have the one face of the copper foil 21, supplied from the copper foil rolled substance 22, and the desired-thickness lithium foil 23, extruded and molded from the extruder 24, faced in opposition, passed through a pair of pressure rollers 25, press-attached to each other and then wound in a rolled

state. In this case, for making the lithium foil 23 thin up to a desired thickness, the lithium foil 23 from the extruder 24 is given cold rolling via 4-step rolls 26-29 and cold rolling mechanism 30. It is thus possible to prevent the adhesion of lithium in a rolled state and the breakage of the lithium during operation up to battery assembly for efficient operation.

COPYRIGHT: (C)1991,JPO&Japio

